

Agency Use

Permit No.:

MTG010206

Date Rec'd 4/27/12

Rec'd By

fh

FORM
NMP

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For Filling Out Form NMP," found at the back of the Form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your Form 2B. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. For additional help in filling out this form please read the attached instructions. The 2008 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or <http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp>

Section A - NMP Status (Check one):

- ☒ New No prior NMP submitted for this site.
☐ Modification Change or update to existing NMP.

Permit Number: MT G010206 (Specify the permit number that was previously assigned to your facility.)**Section B - Facility or Site Information:**Site Name 21 Mile RanchSite Location East of Highway 87 North, Just South of Mile Marker 21Nearest City or Town Shepherd County Yellowstone**Section C - Applicant (Owner/Operator) Information:**Owner or Operator Name Ellis Cattle CompanyMailing Address 18 Ellis LaneCity, State, and Zip Code Red Lodge, MT 59068Phone Number 406-425-3248

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Section D - NMP Minimum Elements:**1. Livestock Statistics**

<i>Animal Type and number of animals</i>	<i># of Days on Site (per year)</i>	<i>Annual Manure Production (tons, cu. yds. or gal)</i>
1. Beef Cattle 5397 Total Head	227	4530 tons
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Method used for estimating annual manure production:

Livestock information and extrapolation from Table 1 Circular DEQ9.

2. Manure Handling

Describe manure handling at the facility:

Manure is windrowed and dried and piled as time allows or necessity dictates.

Frequency of Manure Removal from confinement areas:

Annual in the spring as we have time to spread it.

Is this manure temporarily stored in any location other than the confinement area? ☒ Yes ☐ No

If so then how and where? It is hauled out with a dump truck to be loaded in the spreader on the pasture we are currently spreading.

I try to stay a day or two ahead of the spreader.

Is manure stored on impervious surface? ☐ Yes ☒ No

If yes, describe type and characteristics of this surface:

3. Waste Control Structures

<i>Waste Control Structure (name/type)</i>	<i>Length (ft)</i>	<i>Width (ft)</i>	<i>Depth (ft)</i>	<i>Volume (cubic ft or gallons)</i>
1. East 2 Evaporation Pond	729	129	9	504, 507 cu ft.
2. West 4 Evaporation Pond	480	118	5.25	119,588 cu ft.
3. Drop Lot Evaporation Pond	291	140	9	146,782 cu ft.
4. South 4 Evaporation Pond	345	213	10.5	309,586 cu ft.
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

4. Disposal of Dead Animals

Describe how dead animals are disposed of at this facility:

Buried on the hill east of the lot. N46 degrees 04.418' W108 degrees 26.641'

The pit is dug in the fall. Animals are hauled soon after death and buried when the ground is not frozen to do so.

5. Clean Water Diversion Practices

Describe how clean water is diverted from production area:

Diversion on the north side of the lot is either pulled East or West. The water that comes West is put into a collection pond to cross a coulee West of the lot. Drainage to the East is pulled East of the collection ditch. Two little ditches are left to be pulled this spring.

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters:

All animals are fenced in a lot and out of state waters.

Describe how chemicals and other contaminants are handled on-site:

Chemicals are purchased and used as needed. Used containers are disposed of as labeled.

8. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **production area**. Indicate the location of these measures. Include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces, and waterways above an open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area; decreasing open lot surface area; repairing or adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

Clean water is diverted away from the lot.

Water from the lot and barn lot are collected in an evaporation ponds.

Drinking water is dispensed by floats. There is no wasted drinking water.

Historically this is a winter lot. There is no water used for cooling.

Area in all pens except East 1 and East 2 was reduced.

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **land application area**. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites; never spray irrigating wastes onto frozen ground; consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Plant sampling/tissue analysis	yes/no	Rotational grazing	yes/no
Conservation or reduced tillage	yes/no	Manure injection or incorporation	yes/no
Terraces or other water control structures	yes/no	Contour plantings	yes/no
Riparian buffers or vegetative filter strips	yes/no	Winter "scavenger" or cover crops	yes/no

Other examples This is our winter ranch consisting of mostly native range. It is seasonally grazed (winter). The only farming is disk lines used as fire breaks for burning sage as a range improvement.

9. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part II of the permit.

Has a guidance document been developed for the facility? Yes ☐ No ☒

Certify the document addresses the following requirements:

Implementation of the NMP:	<input checked="" type="checkbox"/> Yes	No
Facility operation and maintenance:	<input checked="" type="checkbox"/> Yes	No
Record keeping and reporting:	<input checked="" type="checkbox"/> Yes	No
Sample collection and analysis:	<input checked="" type="checkbox"/> Yes	No
Manure transfer:	<input checked="" type="checkbox"/> Yes	No

Provide name, date and location of most recent documentation:

DEQ form NMP and Circular DEQ 9 21 Mile Ranch. Visiting with John McDunn soil samples will only be taken on land that we will spread in a given season, not from the entire ranch.

If your answer to any of the above question is no, provide explanation

For document, a copy of the this form and Circular DEQ 9 are used as a guide.

Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

No If no, then provide an explanation of how animal waste at this site are managed.

■ Yes If yes, then the information requested in Section E must be provided.

Refer to enclosed copy Scale 1:100000. This is a map drawn off an areal photo of the ranch indicating pastures.

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"x17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any down-gradient surface waters
- The location of any down-gradient open tile line intake structures
- The location of any down-gradient sinkholes
- The location of any down-gradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field.
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibrating procedures:

Pull type spreader by LEON. Calibrated by use of average weight and use of GPS.

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining application rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to the following method:

■ The recommended method(s) found in Section 5 of Department Circular DEQ 9

Other (describe) _____

Soil Sampling and Analysis Procedures

A representative soil sample from the top 6 inch layer of soil in each field will be analyzed for phosphorus content at least once every five years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.

Soil sample collection will occur according to the following method:

■ The recommended method(s) found in Section 5 of Department Circular DEQ 9

Other (describe) _____

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. Fields with identical crops and soil types may be grouped together.

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Horse pasture 165 acres, Butte pasture 275 acres, Corral pasture 1200 acres, Pole Gate 1725 acres, North 20 Mile 1120 acres.

Crop 1 (year 1 or ?) plant species	Range native and introduced
Irrigated (Y/N)	No
Yield Goal (ton/ac or bushel/ac)	ton/ac
N Content of soil as nitrate (lbs/acre or ppm)	2 ppm
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	8-10 ppm
Time of Year When Application will Occur (month)	spring April or May
Application frequency (per year by month)	once
Form of manure (liquid/solid)	solid
Method of Application	spreader
Is manure incorporated or broadcast?	broadcast
Frequency of Application (yearly, biannual, etc.?)	less than once every 7 years
Crop 2	same above
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P ₂ O ₅ (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, etc?)	

Phosphorus Risk Assessment

The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using either Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Method Used

Indicate which method will be used to determine phosphorus application:

- ☐ Method A – Representative Soil Sample
☐ Method B – Phosphorus Index

Method A – Representative Soil Sample

- Obtain one or more representative soil sample(s) from the field.
- Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm).
- Using the results of the Olsen P test, determine the application basis according to the Table below

Soil Test	
<i>Olsen P Soil Test Result (ppm)</i>	<i>Application Basis</i>
<25.0	Nitrogen Needs Of Crop
25.1 - 100.0	Phosphorus Needs Of Crop
100.0 - 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application

Method B – Phosphorus Index

- Complete a Phosphorus Index according to for each crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections Appendix A, please refer to Attachment 2 of Department Circular DEQ 9.
- Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus	
<i>Total Phosphorus Index Value</i>	<i>Site Vulnerability to Phosphorus Loss</i>
<11	Low
11-21	Medium
22-43	High
>43	Very High

- Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss

<i>Site Vulnerability to Phosphorus Loss</i>	<i>Application Basis</i>
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

- d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet

Site/Field:

<i>Nutrient Budget</i>		<i>Nitrogen-based Application</i>	<i>Phosphorus-based Application</i>
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	25	nitrogen needed
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable	0	0
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)	first application	first application
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	0
(-)	Nutrients supplied in irrigation water, lbs/acre	none	none
	= Additional Nutrients Needed, lbs/acre	25	0
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)	12.9	14.2
(x)	Nutrient Availability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)	.7	1.0
	= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal	9.03	14.2
	Additional Nutrients needed, lbs/acre (calculated above)	25	0
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)	9.03	14.2
	= Manure Application Rate, tons/acre or 1,000 gal/acre	2.8 tons/acre	0

Comments:

Neal Fehringer, Certified Professional Agronomist, C.C.A. does the Fertilizer Recommendations for Energy Labs, Inc. His recommendation is to apply 20 tons/acre this level will suffice for 10-15 years. It looked to heavy so we apply at 10 tons/acre.

Section F - CERTIFICATION**Permittee Information:**

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)

Alvin A. Ellis III

B. Title (Type or Print)

Vice President

C. Phone No.

406-425-3248

D. Signature**E. Date Signed**

04/25/12

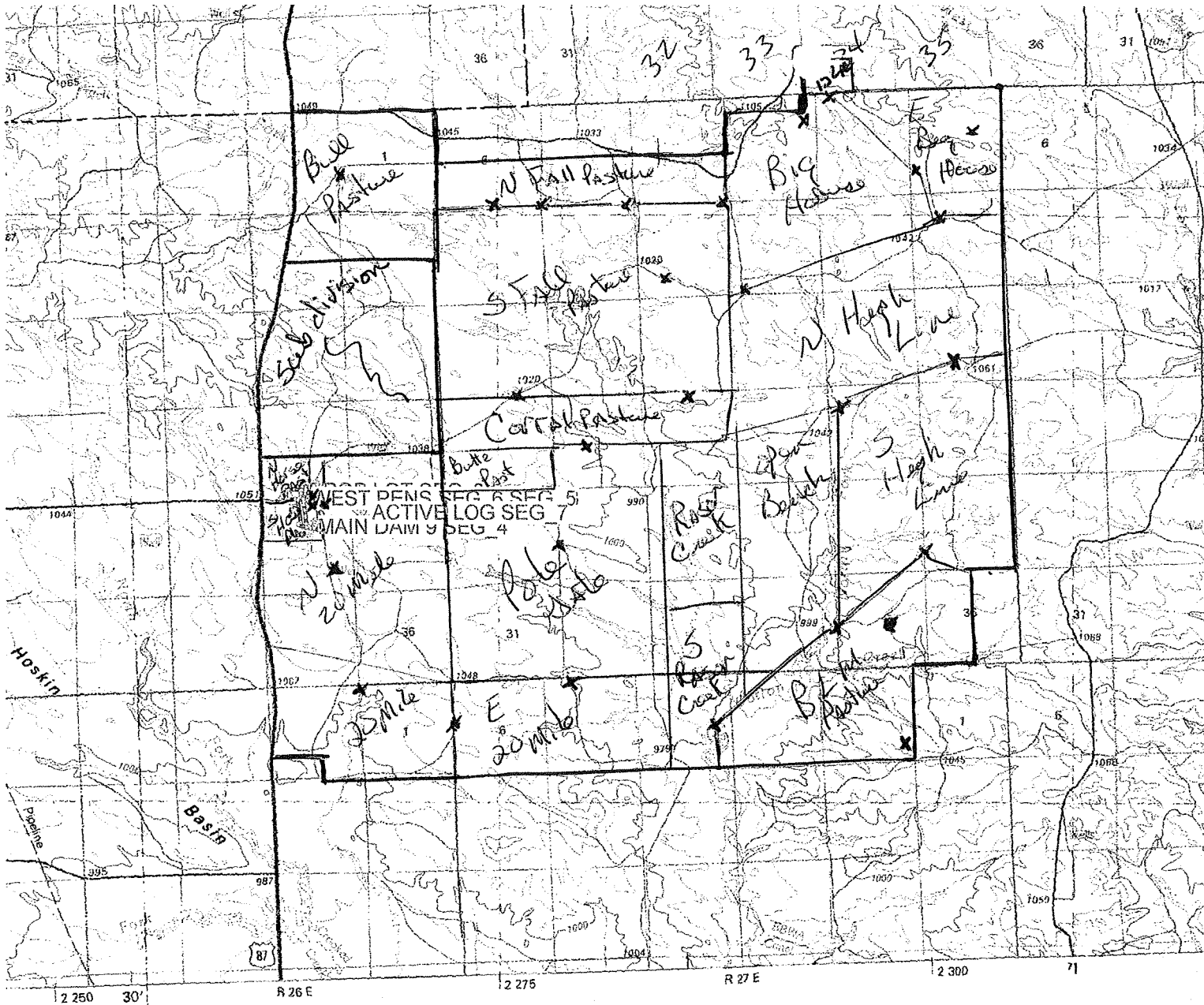
Return the Form NMP, Nutrient Management Plan to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

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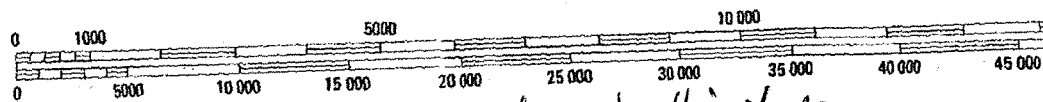
APR 27 2012

DEQWPB
PERMITTING & COMPLIANCE DIV.

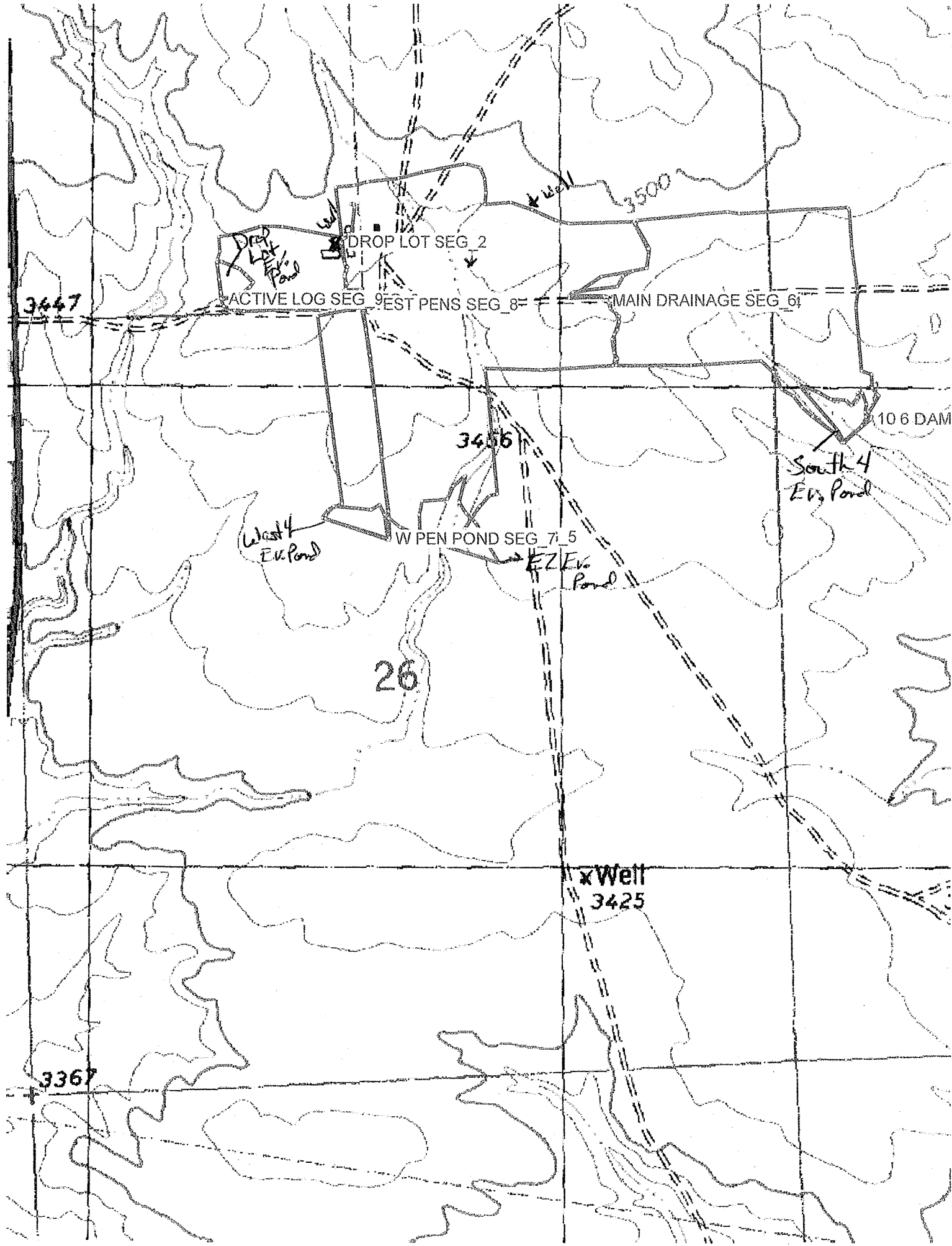


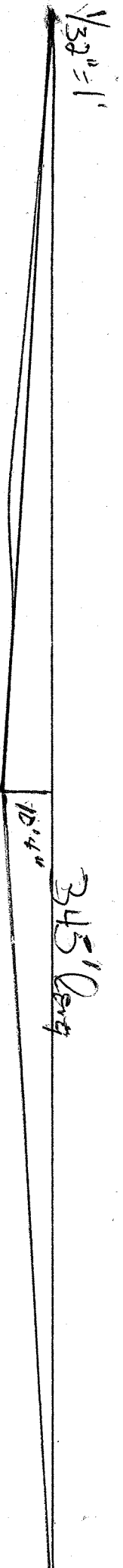
SCALE 1:100 000

THE MAP REPRESENTS 1 KILOMETER ON THE GROUND
 HORIZONTAL INTERVAL 20 METERS



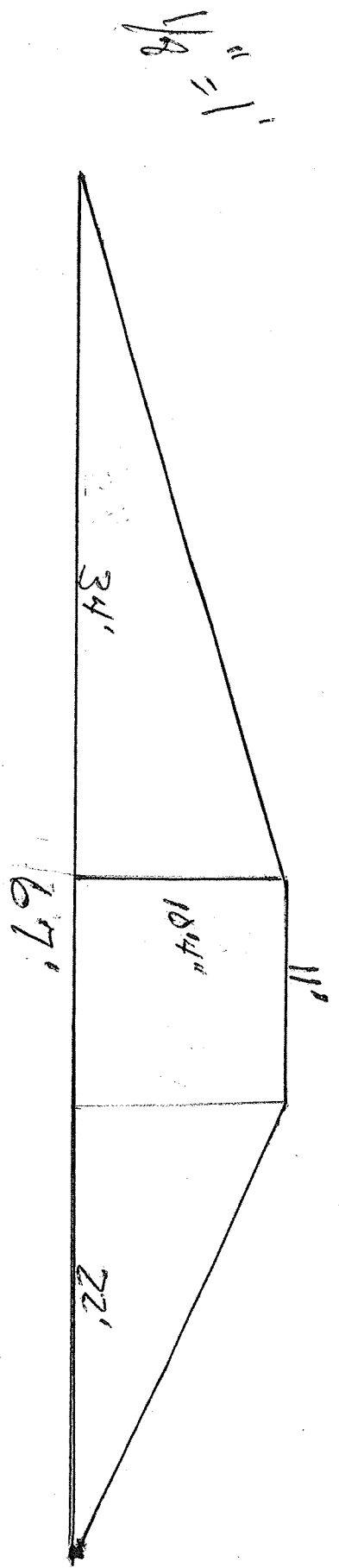
This Boundary was drawn off an aerial photo onto this topo.
X marks Wells



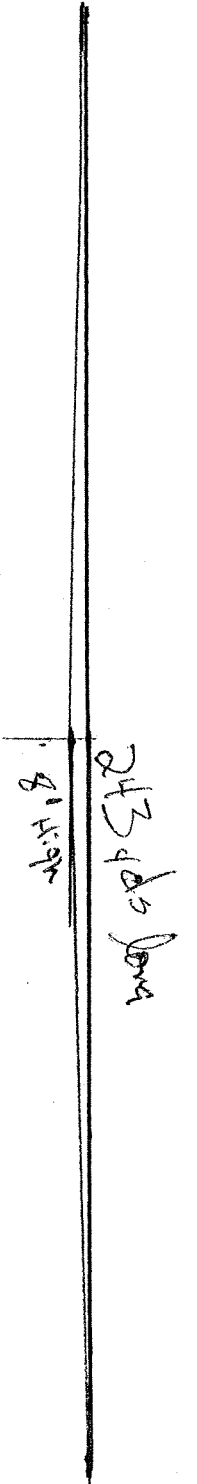


South 4 Dam

Cross Section

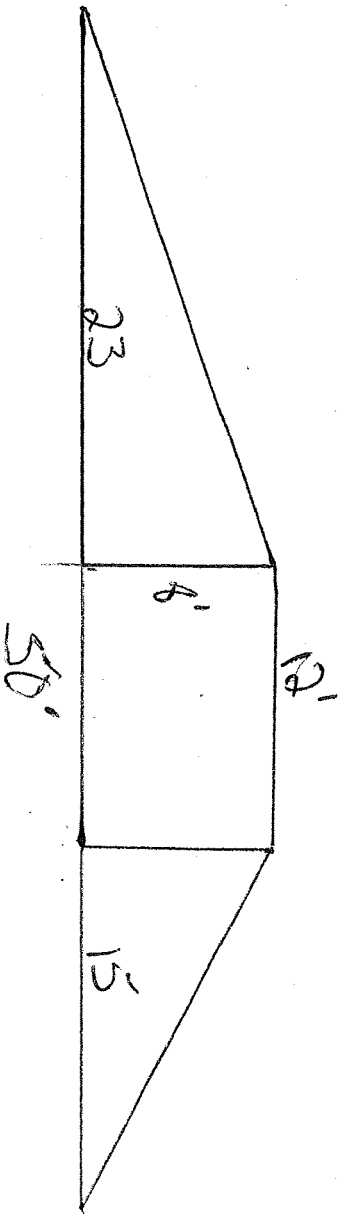


PA/1" = 1/8"



East 2 Dr

Cross Section



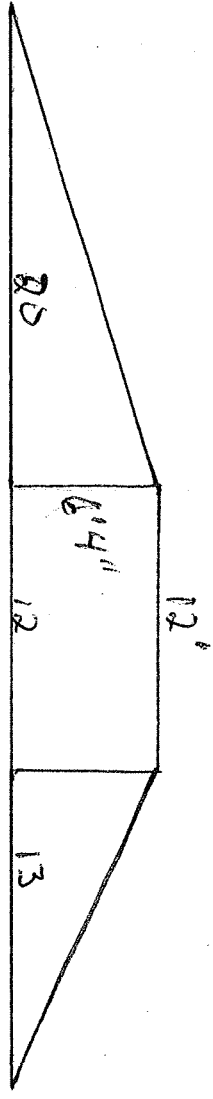
1" = 1/8"

1/64" = 1'



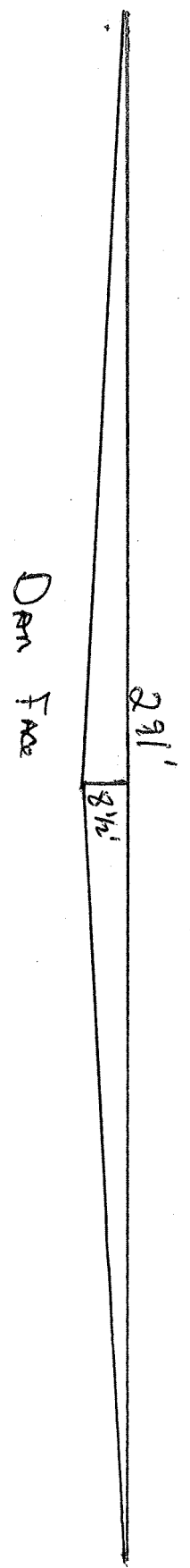
West Point Dam

1/8" = 1'



Cross Section

1/2" = 1'



Drop Not Dam

1/2" = 1'

